# Studies of Tiger Beetles. CLV. New data from Thailand and Cambodia (Coleoptera: Cicindelidae)

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#### **Abstract**

Thirty-seven tiger beetle species are here examined which were collected in Thailand and Cambodia during several recent missions of the Royal Belgian Institute of Natural Sciences (RBINS). Seven species are newly recorded from Cambodia, and moreover a new species, Cylindera (Ifasina) khmer, is also described from Cambodia. Neocollyris (Neocollyris) vitalisi (W. HORN, 1924) is tentatively raised to full specific status.

### Résumé

Les 37 espèces de Cicindèlides sont étudiées ici qui ont été recueillies lors de plusieures missions récemment menées en Thailande et Cambodge par l'Institut Royal des Sciences Naturelles de Belgique (IRSNB). Sept espèces sont nouvellement indiquées du Cambodge, et une nouvelle espèce, Cylindera (Ifasina) khmer, est aussi décrite du Cambodge. Neocollyris (Neocollyris) vitalisi (W. HORN, 1924) est tentativement elevée au rang d'espèce propre.

Key words: Coleoptera, Cicindelidae, Thailand, Cambodia.

#### Introduction

Due probably to heavy long-lasting wars and the subsequent difficult political conditions, Cambodia is still a poorly explored country, as far as its entomological fauna is concerned. Apart from Walther Horn's preliminary lists of species, which were related to the whole of Indochina (HORN, 1913, 1914), only 44 tiger beetle species have been formally recorded from this country so far (Table I). Future research will certainly add some more species to this list. Thailand, in contrast, is a much better known country, thanks especially to the dedicated research efforts by NAVIAUX (1989, 1991a, b, 1995, 1996a, b, 2002, 2004) and NAVIAUX & PINRATANA (2004). My own reckoning for Thailand presently indicates a total of 133 tiger beetle species (with 25 or 18.7% endemics), what definitely ranges Thailand among the countries of the world with the richest cicindelid biodiversity (Pearson & Cassola, 1992; Cassola & Pear-SON, 2000). More precisely, Thailand has turned out to be the 10th country of the world as far as the total number of tiger beetle species is concerned, and even the 6<sup>th</sup> as to the surface or km<sup>2</sup>/species ratio (3,848).

### List of species

1. Tricondyla annulicornis SCHMIDT-GOEBEL, 1846 THAILAND, Loei: Na Haeo, 21-29.IV.00, Malaise trap, P. Grootaert, 1 & (RBINS).

Described as a distinct species (SCHMIDT-GOEBEL, 1846) but for long time considered to be a subspecies of *T. cyanea* Dejean, 1825 (WIESNER, 1992), this species has been reinstated in its full specific status by NAVIAUX (2002). It is also known from Cambodia (SAWADA & WIESNER, 1999).

#### 2. Protocollyris probsti Naviaux, 1994

CAMBODIA, Siem Reap: Phnom Kulen, 24.V.03, light trap, J. Constant & K. Smets, 1 \( \rightarrow \) (RBINS).

Described from Thailand and Laos (NAVIAUX, 1995), new to Cambodia.

### 3. Neocollyris (Neocollyris) b. bonellii (Guérin-Méneville, 1834)

CAMBODIA, Siem Reap: Angkor Thom, 23.V.03, sweeping, J. Constant, K. Smets & P.Grootaert, 1 3 (RBINS); Prek Toal (Tonle Sap Lake), 27-28.V.03, sweeping, J. Constant, K. Smets & P. Grootaert, 2 3 (RBINS); 8 km N of Sre Noi (road to Anlong Vaeng), 29-30.V.03, dry dipteroc. forest, day, J. Constant & K. Smets, 1 3 (FCC), 1 2 (RBINS).

A common widespread species (NAVIAUX, 1995), however not yet formally recorded from Cambodia.

### 4. Neocollyris (Neocollyris) moesta (SCHMIDT-GOEBEL, 1846)

THAILAND, Loei: Na Haeo, 22-29.V.03, Malaise trap 4, P. Grootaert, 1 & (RBINS).

Cambodia, Siem Reap: 8 km N of Sre Noi (road to Anlong Vaeng), 29-30.V.03, dry dipterocarp forest, day, J. Constant & K. Smets, 2 99 (RBINS); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump, 1 39 (RBINS).

Neither WIESNER (1992) nor NAVIAUX (1995) mentioned this easily recognizable species from Cambodia.

Table I — Checklist of the tiger beetles (Coleoptera: Cicindelidae) of Cambodia.

Species	References
1. Tricondyla (Tricondyla) annulicornis Schmidt- Goebel, 1846	Wiesner, 1992; Sawada & Wiesner, 1999
2. Tricondyla (Tricondyla) stricticeps Chaudoir, 1864	SAWADA & WIESNER, 1999; NAVIAUX, 2002
3. Protocollyris probsti Naviaux. 1994	CASSOLA, this paper
4. Neocollyris (Neocollyris) b. bonellii (Guérin-M., 1834)	CASSOLA, this paper
5. Neocollyris (Neocollyris) moesta (Schmidt-Goebel, 1846)	HORN, 1913; CASSOLA, this paper
6. Neocollyris (Neocollyris) batesi (W. Horn, 1892)	Wiesner, 1992
7. Neocollyris (Neocollyris) fuscitarsis (Schmidt-Goebel, 1846)	CASSOLA, this paper
8. Neocollyris (Neocollyris) rufipalpis (Chaudoir, 1864)	Horn, 1914; Wiesner, 1992; Sawada & Wiesner, 1999
9. Neocollyris (Orthocollyris) crassicornis (Dejean, 1825)	FLEUTIAUX, 1902; NAVIAUX, 1995 ("presque tout le territoire")
10. Neocollyris (Leptocollyris) l. linearis (Schmidt-Goebel, 1846)	Wiesner, 1992; Sawada & Wiesner, 1999
11. Neocollyris (Leptocollyris) cylindripennis (Chaudoir, 1864)	Wiesner, 1992 (sub cochinchinensis)
12. Neocollyris (Leptocollyris) l. linearis (Schmidt-Goebel, 1846) 13. Neocollyris (Pachycollyris) fasciata (Chaudoir, 1864)	WIESNER, 1992; CASSOLA, this paper WIESNER, 1992; NAVIAUX, 1995
14. Prothyma (Paraprothyma) exornata Schmidt-Goebel, 1846	Horn, 1913; Rivalier, 1964; Wiesner, 1992;
14.170myma (1 arapromyma) exornaia Bellilliai-Goodel, 1646	SAWADA & WIESNER, 1999
15. Prothyma (Genoprothyma) heteromalla (Macleay, 1825)	RIVALIER, E., 1964 ("dans toute l'Indochine"); CASSOLA, this paper
16. Prothyma (Genoprothyma) bouvieri W. Horn, 1896	WIESNER, 1992
17. Heptodonta eugenia Chaudoir, 1865	Wiesner, 1992; Sawada & Wiesner, 1999
18. Calochroa f. flavomaculata (Hope, 1831)	Horn, 1913 (sub <i>sexpunctata</i> ); Wiesner, 1992; Sawada & Wiesner, 1999
19. Calochroa mouhotii (Chaudoir, 1865)	Horn, 1913; Rivalier, 1961; Wiesner, 1992; Sawada & Wiesner, 1999
20. Calochroa elegantula (Dokhtouroff, 1882)	Wiesner, 1992 (sub mouhoti elegantula);
	SAWADA & WIESNER, 1999 (sub mouhoti elegantula)
21. Calochroa interruptofasciata (Schmidt-Goebel, 1846)	HORN, 1913; RIVALIER, 1961; WIESNER, 1992;
22 Calcobrag harmandi (Elantiani, 1902)	SAWADA & WIESNER, 1999
22. Calochroa harmandi (Fleutiaux, 1893) 23. Calochroa bramani (Dokhtouroff, 1882)	Horn, 1913; Rivalier, 1961; Wiesner, 1992 Wiesner, 1992; Sawada & Wiesner, 1999; Cassola, this paper
24. Calomera plumigera (W. H.) ssp. scoliographa (Rivalier, 1953)	RIVALIER, 1953; WIESNER, 1992;
24. Catomera pianigera (W. 11.) ssp. sconograpia (Rivanci, 1955)	SAWADA & WIESNER, 1999 (sub p. macrograptina)
<ol> <li>Cosmodela aurulenta (Fabr.) ssp. juxtata (Acciavatti &amp; Pearson, 1889)</li> </ol>	Horn, 1913; Rivalier, 1961 (sub a.flavomaculata); Wiesner, 1992; Sawada & Wiesner, 1999
26. Cosmodela virgula (Fleutiaux, 1893)	Horn, 1913; Wiesner, 1992; Sawada & Wiesner, 1999
27. Lophyra (Lophyra) fuliginosa (Dejean, 1826)	HORN, 1913; WIESNER, 1992; SAWADA & WIESNER, 1999
28. Lophyra (Lophyra) cancellata (Dejean, 1825)	Rivalier, 1961; Wiesner, 1992; Sawada & Wiesner, 1999
29. Lophyra (Spilodia) striolata (Illiger, 1800)	Horn, 1913; Wiesner, 1992; Sawada & Wiesner, 1999
30. Lophyra (Spilodia) lineifrons (Chaudoir, 1865)	Rivalier, 1961; Wiesner, 1992; Sawada & Wiesner, 1999
31. Naviauxella ramai Naviaux, 1991	CASSOLA, this paper
32. Cylindera (Ifasina) foveolata (Schaum, 1863)	CASSOLA, this paper
33. Cylindera (Ifasina) viduata (Fabricius, 1801)	Wiesner, 1992; Sawada & Wiesner, 1999; Cassola, this paper
34. Cylindera (Ifasina) khmer n. sp. *	CASSOLA, this paper
35. Cylindera (Ifasina) decempunctata (Dejean, 1825)	HORN, 1913; WIESNER, 1992; SAWADA & WIESNER, 1999
36. Cylindera (Ifasina) discreta (Schaum, 1863) (1)	Horn, 1913; Wiesner, 1992
37. Cylindera (Eugrapha) minuta (Olivier, 1790)	RIVALIER, 1961 ("majeure partie du territoire"); CASSOLA, this paper
38. Cylindera (Eugrapha) venosa (Kollar, 1836)	Rivalier, 1961; Wiesner, 1992
39. Myriochila (Myriochila) sinica (Fleutiaux, 1889)	Wiesner, 1992; Sawada & Wiesner, 1999
40. Myriochila (Myriochila) specularis (Chaudoir, 1865)	HORN, 1913 (sub speculifera); RIVALIER, 1961;
, , , , , , , , , , , , , , , , , , ,	Wiesner, 1992 (sub speculifera)
41. Abroscelis tenuipes (Dejean, 1826)	Wiesner, 1992
42. Callytron nivicinctum (Chevrolat, 1845)	Wiesner, 1992
43. Callytron andersoni (Gestro, 1889)	Wiesner, 1992; Sawada & Wiesner, 1999
44. Enantiola hewittii (W. Horn, 1908)	Wiesner, 1992
Excluded species:	
Tricondyla pulchripes White, 1844	Horn, 1913; Wiesner, 1992; Sawada & Wiesner, 1999; Naviaux, 2002
Tricondyla gestroi Fleutiaux, 1893	Horn, 1913; Wiesner, 1992; Sawada & Wiesner, 1999; Naviaux, 2002
Neocollyris (Neocollyris) stiengensis (W. Horn, 1914)	Wiesner, 1992; Naviaux, 1995
Neocollyris (Neocollyris) rugosa (Chaudoir, 1864)	Wiesner, 1992; Naviaux, 1995
Neocollyris (Neocollyris) impressifrons (Chaudoir, 1864)	Wiesner, 1992; Naviaux, 1995
Calomera a. angulata (Fabricius, 1798)	HORN, 1913; RIVALIER, 1961, sub <i>Lophyridia sumatrensis</i> ("presque tout le territoire")
* Endemics: 1	

<sup>\*</sup> Endemics: 1

(1) This record has probably to be referred to a different species of the discreta-group, juergenwiesneri Naviaux, 1991, known from Thailand. The true discreta occurs in Sulawesi only (Cassola, 1991) and, with different subspecies, in other Indonesian islands and in the Philippines.

However, it had been recorded from such a country by Horn (1913). The new data cited above clearly confirm Horn's record.

## 5. *Neocollyris (Neocollyris) batesi* (W. HORN, 1892) THAILAND, Ranong: Koh Samed Island, 15-17.V.01, Constant & Grootaert, 1♀ (RBINS).

Already recorded from Thailand by WIESNER (1992) and NAVIAUX (1995). Known also from Cambodia (WIESNER, 1992).

6. Neocollyris (Neocollyris) intermedia Naviaux, 1994 Thailand, Loei: Na Haeo, Station 20023, 25.V.00, P. Grootaert,  $1 \circ (RBINS)$ .

Described at first as a subspecies of *N. (N.) orichalcina* (W. HORN, 1896) (NAVIAUX, 1995), *intermedia* has been subsequently raised to full specific status (NAVIAUX, 2004).

## 7. Neocollyris (Neocollyris) siamensis Naviaux, 1991 Thailand, Kanchanaburi: Sai Yok N.P., 4-5.VI.03, J. Constant & K. Smets, $1 \$ (RBINS), $1 \$ (FCC).

Described from the Khao Yai Nat. Park in the Nakhon Ratchasima province (Naviaux, 1991b), this species is said to be fairly common in the whole of Thailand, except for the north-western provinces (Naviaux, 1995).

### 8. Neocollyris (Neocollyris) fuscitarsis (SCHMIDT-GOEBEL, 1846)

THAILAND, Loei: Na Haeo (bio. station), 5-12.V.01, secondary forest, Constant & Grootaert,  $1 \circlearrowleft 1 \circlearrowleft (RBINS)$ ; Na Haeo (field res. st.), 15-19.V.03, day catch, Constant & K. Smets,  $1 \circlearrowleft (RBINS)$ .

CAMBODIA, Siem Reap: 8 km N of Sre Noi (road to Anlong Vaeng), 29-30.V.03, dry dipteroc. forest, day, J. Constant & K. Smets,  $1 \circlearrowleft 1 \circlearrowleft (RBINS)$ .

A widespread easily recognizable species, already known from Thailand (NAVIAUX, 1995) but new to Cambodia.

### 9. Neocollyris (Neocollyris) rufipalpis (CHAUDOIR, 1864)

THAILAND, Loei: Na Haeo, river banks, 5-12.V.01, Constant & Grootaert, 1 & (RBINS).

Already known from Thailand (NAVIAUX, 1995), this species has also been recorded from Cambodia and Vietnam (SAWADA & WIESNER, 1999).

### 10. Neocollyris (Leptocollyris) l. linearis (SCHMIDT-GOEBEL, 1846)

THAILAND, Loei: Na Haeo (bio. station), 5-12.V.01, secondary forest, Constant & Grootaert, 1 \( \text{(RBINS)} \); Na Haeo (bio. station), 7-14.V.00, Malaise trap, P. Grootaert, 1 \( \text{(RBINS)} \). CAMBODIA, Siem Reap: Angkor Thom, station 24048, 30.VII.04, P. Grootaert, 1 \( \text{(RBINS)} \).

A small widespread species, occurring from Myanmar to southern China (NAVIAUX, 1995).

### 11. Neocollyris (Leptocollyris) variicornis (CHAUDOIR, 1864)

Thailand, Loei: Na Haeo, 31.V-6.VI.99, P. Grootaert,  $1 \stackrel{\frown}{\downarrow}$  (RBINS); Na Haeo, station 20023, 25.V.00, P. Grootaert,

1 ♂ (RBINS); Na Haeo (bio. station), 5-12.V.01, secondary forest, Constant & Grootaert, 1 (RBINS); Dan Sai: Bantun, 11.V.01, Constant & Grootaert, 1♀ (RBINS); Na Haeo field res. sta., 15-19.V.03, day catch, Constant & K. Smets, 1♂ (RBINS), 1♀ (FCC); Na Haeo, Chang Tok, waterfall, 18.V.03, day catch, K. Smets, 1♂ (RBINS). Kanchanaburi: Sai Yok N.P., 4-5.VI.03, J. Constant & K. Smets, 1♂ (RBINS), 1♂ (FCC).

Also a small widespread species, particularly common in northern Thailand (NAVIAUX, 1995). The particular shape of the pronotum makes it easily recognizable, but there is apparently some variability

### 12. Neocollyris (Leptocollyris) subtilis (CHAUD.) ssp. brachycephala (W. HORN, 1893)

THAILAND, Loei: Na Haeo, Chang Tok, 17.V.03 (23035), P. Grootaert,  $1 \circ (RBINS)$ .

Described from "Carin Cheba" (Myanmar), this subspecies replaces s. subtilis in northern Thailand (NAVIAUX, 1995).

### 13. Neocollyris (Leptocollyris) variitarsis (CHAUDOIR, 1860)

A widespread species, occurring from Eastern Nepal to Vietnam and southern China (NAVIAUX, 1995).

### 14. Neocollyris (Pachycollyris) vitalisi (W. Horn, 1924)

THAILAND, Loei: Na Haeo (bio. station), 5-12.V.01, secondary forest, Constant & Grootaert,  $1 \circ (RBINS)$ .

Described as a subspecies of *N. (P.) feae* (W. HORN, 1893), but quite distinct because of the smaller size, the darker colour and its geographical distribution, *vitalisi* is herein tentatively raised to full specific status.

### 15. Prothyma (Paraprothyma) schmidtgoebeli W. HORN, 1895

THAILAND, Loei: Na Haeo, Station 20023, 25.V.00, P. Grootaert, 1 d (RBINS), 1 d (FCC); Na Haeo, 29.IV-6.V.01, Constant & Grootaert, 1 ♂ 1 ♀ (RBINS); Na Haeo (bio station), 5-12.V.01, Malaise trap, P. Grootaert, 1 \( (RBINS); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 6 33 secondary forest, Constant & Grootaert, 1 & 2 \(\text{Q}\) (RBINS), 1 & (FCC); Na Haeo (bio station), 5-12.V.01, Constant & Grootaert, station 1 (small trees, dense ground vegetation, open canopy), 1 \( (RBINS); Na Haeo (bio station), 5-12.V.01, Constant & Grootaert; pitfall station 3 (bamboo, very short ground vegetation, thin litter; recently burnt), 2 33 (IRSNB), 1 d (FCC); Na Haeo (field res. stat.), 15-19.V.03, light trap, J. Constant, K. Smets & P. Grootaert, 1♀ (RBINS); Na Haeo field res. sta., 15-19.V.03, day catch, J. Constant & K. Smets, 1 ♂ (RBINS), 1 ♂ (FCC).

A well-known species, distributed from Myanmar to Vietnam (Wiesner, 1992).

### 16. Prothyma (Genoprothyma) heteromalla (MACLEAY, 1825)

CAMBODIA, Siem Reap: Angkor Tom, station 24048, 30.VII.04, P. Grootaert, 1♀ (RBINS).

Never formally recorded from Cambodia previously (RIVALIER, 1964; WIESNER, 1992).

17. *Prothyma (Genoprothyma) bouvieri* W. HORN, 1896 CAMBODIA, Siem Reap: Siem Reap, 2-3.II.03, neon light trap, Stéphane De Greef, 1 \( \phi \) (RBINS); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump, 1 \( \frac{1}{2} \) (FCC).

Formerly mentioned from Cambodia just by WIESNER (1992), this species has definitely to be considered as occurring in such a country.

### 18. Prothyma (Genoprothyma) fallaciosa Rivalier, 1964

THAILAND, Loei: Na Haeo, 24-30.IV.00, Malaise trap, P. Grootaert,  $1 \stackrel{?}{\circ} 1 \stackrel{?}{\circ} (RBINS)$ ,  $1 \stackrel{?}{\circ} (FCC)$ ; Na Haeo (bio station), 5-12.V.01, pitfall station 3 (bamboo, very short ground vegetation, thin litter; recently burnt), Constant & Grootaert, 2 33 (RBINS); Na Haeo (bio station), 5-12.V.01, pittfall station 4 (secondary forest, tall trees, dense ground vegetation, densely covered with litter), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pittfall station 6 (abandoned field: grasses, rough vegetation and open areas), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pittfall station 7 (bamboo forest, very thin litter, almost no ground vegetation), Constant & Grootaert, 1 \( (RBINS), 1 \) (FCC); Na Haeo, 5-12.V.01, secondary forest, Malaise trap, P. Grootaert, 2 33 (RBINS), 13 (FCC); Na Haeo, 5-12.V.01, secondary forest, Malaise trap, Constant & Grootaert, 19 (RBINS); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 1 & 1 \, (IRSNB), 1 \, (FCC); Na Haeo FIRS, 16.V.03, station 23030, P. Grootaert, 1 ♂ (RBINS); Na Haeo, 18-31.V.04, Malaise trap 4, P. Grootaert, 13 (FCC).

Described from Laos and the "haut-Mékong" (RIVALIER, 1964), and often confused with *schmidt-goebeli* in many collections, this species has already proved to be quite widespread in Thailand (NAVIAUX, 1991).

19. Prothyma (Genoprothyma) rapillyi Naviaux, 1989 Thailand, Loei: Na Haeo, station 20023, 25.V.00, P. Grootaert,  $2 \stackrel{?}{\circ} \stackrel{?}{\circ} 1 \stackrel{?}{\circ} (RBINS), 1 \stackrel{?}{\circ} (FCC);$  Na Haeo, station 20025, 26.V.00, P. Grootaert,  $1 \stackrel{?}{\circ} (RBINS);$  Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert,  $2 \stackrel{?}{\circ} \stackrel{?}{\circ} (RBINS), 1 \stackrel{?}{\circ} (FCC);$  Na Haeo (bio station), 5-12.V.01, secondary forest, Constant & Grootaert,  $1 \stackrel{?}{\circ} (RBINS);$  Na Haeo (bio station), 5-12.V.01, pitfall station 3 (bamboo, very short ground vegetation, thin bitter, recently burnt), Constant & Grootaert,  $1 \stackrel{?}{\circ} (FCC), 1 \stackrel{?}{\circ} (RBINS);$  Na Haeo (bio station), 5-12.V.01, pitfall station 7 (bamboo forest, almost no ground vegetation), Constant & Grootaert,  $3 \stackrel{?}{\circ} \stackrel{?}{\circ} (IRSNB);$  Na Haeo, 29.V-5.VI.03, Malaise trap 4, P. Grootaert,  $1 \stackrel{?}{\circ} (RBINS);$  Na Haeo FIRS, station 23030, 16.V.03, P. Grootaert,  $1 \stackrel{?}{\circ} (FCC).$ 

Described from eastern Thailand (NAVIAUX, 1989), this species apparently is a Thai endemic. Its proper separation from *schmidtgoebeli* sometimes appears to be rather delicate. However, the two species even belong to different subgenera.

### 20. Heptodonta eugenia CHAUDOIR, 1865

CAMBODIA, Siem Reap: Angkor Thom, 23.V.03, day catch, J. Constant, P. Grootaert & K. Smets, 1  $\stackrel{\circ}{\circ}$  (RBINS); Phnom Kuen, day catch, 24-25.V.03, J. Constant & K. Smets, 1  $\stackrel{\circ}{\circ}$  (RBINS), 1  $\stackrel{\circ}{\circ}$  (FCC); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump, 1  $\stackrel{\circ}{\circ}$  (RBINS), 1  $\stackrel{\circ}{\circ}$  (FCC).

A common widespread species, usually collected on small vertical slopes or roadcuts (NAVIAUX & PINRATANA, 2004). Its occurrence in Cambodia had already made known by SAWADA & WIESNER, 1999).

21. Therates pseudoprobsti Probst & Wiesner, 1994 Thailand, Loei: Na Haeo Nat. Park, 7.V.01, Constant & Grootaert, 1♀ (RBINS).

Apparently a Thai endemic (PROBST & WIESNER, 1994; NAVIAUX & PINRATANA, 2004).

#### 22. Calochroa f. flavomaculata (HOPE, 1831)

THAILAND, Loei: Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 1 \( \text{(RBINS)} \); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 3 ♂ 8 ♀♀ (RBINS), 1 ♀ (FCC); Na Haeo (bio station), 5-12.V.01, light trap, pitfall station 1 (small trees, dense ground vegetation, open canopy), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, light trap, pitfall station 2 (bamboo, some old trees, very short ground vegetation), Constant & Grootaert, 12 (RBINS); Na Haeo (bio station), 5-12.V.01, light trap, pitfall station 6 (abandoned field: grasses, rough vegetation and open areas), Constant & Grootaert, 1 ♀ (RBINS); Na Haeo (field res. stat.), 15-19.V.03, light trap, J. Constant, K. Smets & P. Grootaert, 233 299 (RBINS), 13 (FCC); Na Haeo (edge pond). 17.V.03, light trap, J. Constant & K. Smets, 1♀ (RBINS). CAMBODIA, Siem Reap: Phnom Kulen, 24.V.03, light trap, J. Constant & K. Smets, 1 ♂ 3 ♀♀ (RBINS), 1 ♀ (FCC); Angkor Thom, 26.V.03, night collecting, IG 30.192, Daniel R. Jump,  $1 \circlearrowleft 1 \circlearrowleft (RBINS), 1 \circlearrowleft (FCC); 8 \text{ km N of Sre Noi (road to Anlong)}$ Vaeng), 29.V.03, light trap, J. Constant & K. Smets, 299 (RBINS), 1 & (FCC); 8 km N of Sre Noi (road to Anlong Vaeng), 29-30.V.03, dry dipterocarp forest, day, J. Constant & K. Smets, 1 & (RBINS); Angkor, Preah-Kahn, Temple, 31.V.03, light trap, J. Constant & K. Smets, 1 & (RBINS); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump,  $1 \circ (RBINS)$ .

Quoted by former authors under *sexpunctata* Fabr. (ACCIAVATTI & PEARSON, 1989), this is a common, well-known species, widely distributed from India to the Philippines, and often collected at lights by night.

#### 23. Calochroa mouhotii (CHAUDOIR, 1865)

THAILAND, Loei: Na Haeo (bio station), 5-12.V.01, secondary forest, Constant & Grootaert, 1 & 2 PP (RBINS), 1 & (FCC).

A polymorphous species, from which elegantula at least can be considered as specifically distinct (SAWADA & Wiesner, 2002). Co-occurrence of both species in the Naeo station clearly confirms such a separate status.

#### 24. Calochroa elegantula (DOKHTOUROFF, 1882)

THAILAND, Loei: Na Haeo, station 20023, 25.V.00, P. Grootaert, 1 & (RBINS), 1 & (FCC); Na Haeo, station 20025, 26.V.00, P. Grootaert, 1 & (RBINS); Na Haeo, 21-29.IV.01, Malaise trap, Constant & Grootaert, 1 & (RBINS); Na Haeo, 5-12.V.01, secondary forest, Malaise trap, Constant & Grootaert, 1 of (FCC); Na Haeo (bio station), 5-12.V.01, secondary forest, Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pitfall station 2 (bamboo, some old trees, very short ground vegetation), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pitfall station 3 (bamboo, very short ground vegetation, thin litter, recently burnt), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pitfall station 4 (secondary forest, tall trees, dense ground vegetation, densely covered with litter), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pitfall station 6 (abandoned field: grasses, rough vegetation and open areas), Constant & Grootaert, 1 & (RBINS); Na Haeo field res. sta., 15-19.V.03, day catch, J. Constant & K. Smets, 1 & (RBINS); Na Haeo, 22.V.03, Malaise trap 2, P. Grootaert, 1 ♀ (RBINS).

Co-occurrence of both elegantula and mouhotii at the Naeo station clearly confirms their separate specific status, as proposed by SAWADA & WIESNER (2002).

### 25. Calochroa interruptofasciata (SCHMIDT-GOEBEL, 1846)

THAILAND, Loei: Na Haeo, station 20022, 24.V.00, P. Grootaert, 1 & (RBINS); Na Haeo, station 20023, 25.V.00, P. Grootaert, 4 do (RBINS); Na Haeo, station 20025, 26.V.00, P. Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 1 \( \text{(RBINS)} \); Na Haeo (bio station), 5-12.V.01, pitfall station 1 (small trees, dense ground vegetation, open canopy), Constant & Grootaert, 1 & (RBINS); Na Haeo, 5-12.V.01, pitfall station 3 (bamboo, some old trees, very short ground vegetation), Constant & Grootaert, 1 & (RBINS); Na Haeo (bio station), 5-12.V.01, pitfall station 6 (abandoned field; grasses, rough vegetation and open areas), Constant & Grootaert, 1♀ (RBINS); Na Haeo (bio station), 5-12.V.01, secondary forest, Constant & Grootaert, 2 3 2 2 (RBINS),  $1 \circlearrowleft 1 \circlearrowleft$  (FCC); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 1 ♀ (RBINS); Na Haeo, 5-12.V.01, secondary forest, Malaise trap, Constant & Grootaert, 1  $\bigcirc$  (RBINS); Na Haeo Khring Tok, station 23043, 19.V.03, P. Grootaert, 1♀ (RBINS); Na Haeo (field research station), 15-18.V.03, white tray, J. Constant, K. Smets & P. Grootaert, 1 3 (RBINS); Na Haeo field res. sta., 15-19.V.03, day catch, J. Constant & K. Smets, 1 \( \text{(RBINS)}. Kanchanaburi: Sai Yok N.P., 4-5.VI.03, J. Constant & K. Smets, 1 & (RBINS).

CAMBODIA, Siem Reap: Angkor Thom, 23.V.03, day catch, J. Constant, P. Grootaert & K. Smets, 1 & (RBINS), 1 & (FCC); Angkor Thom, 26.V.03, night collecting, IG 30.192, Daniel R. Jump, 1 3 (RBINS); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump, 13 (FCC), 12 (RBINS).

A common species, widely distributed from Myanmar to Vietnam and southern China (NAVIAUX & PINRATANA, 2004).

#### 26. Calochroa bramani (DOKHTOUROFF, 1882)

CAMBODIA, Siem Reap: Angkor Thom, 23.V.03, sweeping, J. Constant, K. Smets & P.Grootaert, 1 & (RBINS); Phnom Kulen, 24.V.03, light trap, J. Constant & K. Smets, 13 (FCC); Phnom Kulen, 24-25.V.03, day catch, J. Constant & K. Smets, 13 (RBINS), 19 (FCC); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump, 1 & 2 PP

The above recorded data definitely confirm the occurrence in Cambodia of this beautiful species, already known from eastern Thailand to Vietnam (SAWADA & Wiesner, 2002; Naviaux & Pinratana, 2004).

### 27. Cosmodela aurulenta (FABR.) ssp. juxtata (ACCIA-VATTI & PEARSON, 1989)

THAILAND, Loei: Na Haeo, Station 20023, 25.V.00, P. Grootaert, 2 33 4 99 (RBINS), 1 3 (FCC); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 1 ♂ 1♀ (RBINS), 19 (FCC); Na Haeo (riverbanks), 5-12.V.01, Constant & Grootaert, 1 & (RBINS); Na Haeo, Chang Tok Waterfalls, 10.V.01, light trap, Constant & Grootaert, 1♀ (RBINS); Na Haeo (field res. stat.), 15-19.V.03, light trap, J. Constant, K. Smets & P. Grootaert, 4 ♂♂ 1♀ (RBINS), 1♀ (FCC); Na Haeo (edge pond), 17.V.03, light trap, J. Constant & K. Smets, 1 & (RBINS).

A common widespread species, occurring with nominal aurulenta from the Sunda Islands to Malacca and with subspecies juxtata from north-eastern India to Vietnam and southern China (ACCIAVATTI & PEARSON, 1989; Naviaux & Pinratana, 2004).

### 28. Lophyra (Lophyra) fuliginosa (Dejean, 1826) THAILAND, Ranong: Kon Samed Island, 15-17.V.01, Constant &

Grootaert, 2 ♂♂ 5 ♀♀ (RBINS), 1 ♂ (FCC).

A fluviatile species, widely distributed from the Sunda Islands to Malacca, Myanmar, Thailand, Indochina and China. It is not known from India, and former odd records from Sri Lanka proved to have to be discarded (NAVIAUX, 1984; ACCIAVATTI & PEARSON, 1989).

#### 29. Lophyra (Spilodia) lineifrons (CHAUDOIR, 1865)

THAILAND, Loei: Na Haeo, 24-30.IV.00, Malaise trap, Constant & Grootaert, 1 & (RBINS); Na Haeo, 25.V.00, Station 20023, P. Grootaert, 13 12 (RBINS); Na Haeo (bio. station), 5-12.V.01, pitfall station 6 (abandoned field; grasses, rough vegetation and open areas), Constant & Grootaert, 13 (RBINS); Na Haeo (bio. station), 5-12.V.01, light trap, Constant & Grootaert, 2 PQ (RBINS), 2 PQ (FCC); Na Haeo (bio. station), 8-15.IV.01, Malaise trap, P. Grootaert, 1 \( \text{(RBINS)} \); Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert,  $1 \supseteq (RBINS)$ .

CAMBODIA, Siem Reap: Angkor Thom, 23.V.03, day catch; J. Constant, P. Grootaert & K. Smets, 2 33 (RBINS); Angkor Thom, 2.VI-31.VII.03, net catching, IG 30.192, Daniel R. Jump,  $2 \stackrel{?}{\supset} 1 \stackrel{?}{\subseteq} (RBINS)$ ,  $1 \stackrel{?}{\supset} (FCC)$ .

A common species, widely distributed in continental Asia from northern India to Vietnam (WIESNER, 1992).

#### 30. Naviauxella ramai NAVIAUX, 1991

THAILAND, Loei: Na Haeo, Chang Tok, 17.V.03 (23035), P. Grootaert, 1 & (RBINS).

CAMBODIA, Siem Reap: Phnom Kulen, 24.V.03, light trap, J. Constant & K. Smets, 1 \, (FCC).

A small species, described from Thailand and thus new to Cambodia. However, the above mentioned female specimen from Phnom Kulen, Cambodia, is a bit darker and moreover it has a dark, pitchy black, slightly metallic labrum.

### 31. Cylindera (Ifasina) foveolata (SCHAUM, 1863)

THAILAND, Loei: Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert, 1 & (RBINS).

CAMBODIA, Siem Reap: Angkor Thom, 26.V.03, night collecting, IG 30.192, Daniel R. Jump, 1 & (RBINS).

A fairly distinct, common species, widely distributed from southern India, the Sunda Islands and the Philippines up the whole of continental SE Asia (WIESNER, 1992). However, it had never been recorded previously from Cambodia, thus formally being new to such a country.

#### 32. Cylindera (Ifasina) viduata (FABRICIUS, 1801)

THAILAND, Loei: Na Haeo (bio station), 5-12.V.01, light trap, Constant & Grootaert,  $1 \stackrel{>}{\circ} 6 \stackrel{>}{\circ} \varphi$  (RBINS),  $2 \stackrel{>}{\circ} \varphi$  (FCC); Na Haeo (bio station), 5-12.V.01, light trap, pitfall station 6 (abandoned field: grasses, rough vegetation and open areas), Constant & Grootaert,  $1 \stackrel{>}{\circ}$  (RBINS); Ranong: Kon Samed Island, 15-17.V.01, Constant & Grootaert,  $3 \stackrel{>}{\circ} \stackrel{>}{\circ} 2 \stackrel{>}{\circ} \varphi$  (RBINS),  $1 \stackrel{>}{\circ}$  (FCC). Kanchanaburi: Sai Yok N.P., 4-5.VI.03, J. Constant & K. Smets,  $1 \stackrel{>}{\circ}$  (RBINS).

CAMBODIA, Siem Reap: 8 km N of Sre Noi (road to Anlong Vaeng), 29.V.03, light trap, J. Constant & K. Smets, 1 & (FCC).

This is a well known, widespread South-east Asian species, distributed from northern India and Nepal eastward into China, Malaysia, Indonesia and the Philippines. All the above mentioned specimens have the subapical dot more or less narrowly and briefly pointed toward the suture.

### 33. Cylindera (Ifasina) khmer n. sp. (Fig. 1 a-d)

Type Material: Holotype,  $\Im$ , from Cambodia (Siem Reap province): Angkor, Preah-Kahn, Temple, 31.V.03, light trap, J. Constant & K. Smets; allotype,  $\Im$ , also from Cambodia: Phnom Kulen, 24.V.03, light trap, J. Constant & K. Smets; one paratype,  $\Im$ , from Angkor Thom, 26.V.03, light trap, J. Constant, K. Smets & P. Grootaert; one paratype,  $\Im$ , from a different locality of Cambodia (Siem Reap province): 8 km N of Sre Noi, road to Anlong Vaeng, 29.V.03, light trap, J. Constant & K. Smets. Holotype, allotype and paratype  $\Im$  in RBINS, paratype  $\Im$  in FCC. DIAGNOSIS: A small *Cylindera (Ifasina)* species similar to, and obviously a close relative of, *viduata*, however syntopically occurring with it and differing because of the oblique, narrow, continuous middle band and the larger, comma-shaped subapical dot.

DESCRIPTION: Head bronze with greenish and cupreous reflections especially on eyes, clypeus and cheeks, anten-

nal plates shiny blue-green; fully glabrous except for two setae or setigerous punctures on fixed loci near eyes. Striations fine on frons, concentric on vertex, stronger on eyes, waved and oblique behind on neck. Eyes pale yellow, globose. Labrum with a longitudinal carina in the middle, distinctly wider than long, a bit longer and triangular shaped in the female, slightly retracted in front in the male, with a small tooth protruding in front in both sexes; fully metallic bronze, with eight submarginal setae some distance from forward edge, setigerous punctures apparent, bright metallic blue-green. Mandibles yellowish-testaceous, more or less darkened on outer half. Labial and maxillary palpi testaceous, the last joint dark metallic greenish with the extreme tip testaceous. Antennae slender, long, reaching over the half of the elytral length in the male, slightly shorter in the female; antennomeres 1-4 metallic bronze-green, segments 5-11 dark blackish-brown, dull, finely and evenly pubescent.

Thorax: pronotum subsquare, approximately as wide as long, parallel-sided, glabrous except for some scattered setae on sides, with fine descending wrinkles in the middle of disc; cupric-bronze with green reflections on sides, transversal constrictions poorly marked. Episterna sparsely setose. Female mesepisternal coupling sulcus a small rounded pit in the middle.

Elytra proportionally wide, convex, with well-marked shoulders, colour dark purple with blue-green round punctures, the punctures being stronger and especially evident in front third of elytra, shallower behind; a darker, dull, unpunctured, narrow striped area runs longitudinally on disc, some distance from the suture. Apical border distinctly rounded with a small sutural spine. Epipleura light coloured, almost testaceous, with some metallic hue. Elytral markings consisting of a conspicuous roundish dot on front third of disc, which obviously represents the end of a non-existing humeral lunule; a transversal, slightly oblique, middle band, made up by a transversal sublateral spot obliquely connected with a subtriangular, rather large, discal spot, which lies in the dull, longitudinal, striped area of elytra; and a large, subrectangular, comma-shaped, subapical spot, which is obliquely directed in front on disc and shortly expanded along the subapical margin toward the apex. Humeral dot lacking in both sexes. Moreover, in the allotype and paratype specimens only, a very narrow, poorly visible, lineole is detectable which runs along the lateral border of elytra and almost connects the middle band to the subapical spot.

Underside metallic dark green, with white sparse pubescence on sides of sternum and the abdominal sternites. Trochanters dark rufous, femora metallic bronze green, tibiae and tarsi more or less tinged with metallic dark violaceous and some greenish reflections; a few rows of spiniform setae on tibiae and tarsi, the setae being more numerous on the apical half of the middle tibiae (toilet tool).

Aedeagus fusiform, straight, tapering, slightly curved downward apically, very similar to that of *viduata*; inner sac typical of the genus *Cylindera*, with a long narrow flagellum whose upper convolutions are crossed by a V-shaped sclerite ("équerre") (RIVALIER, 1950).

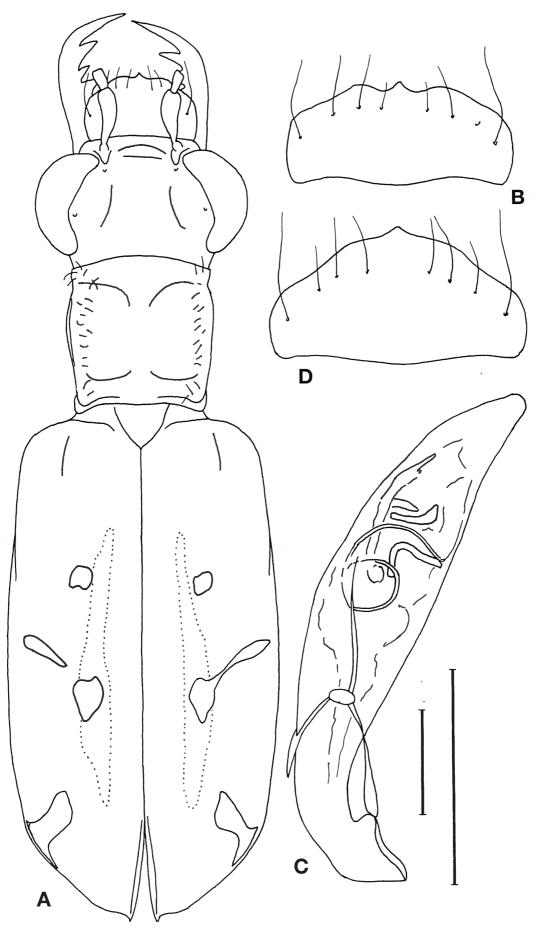


Fig. 1. — *Cylindera (Ifasina) khmer* n. sp., male holotype from Preah-Kahn, temple, Angkor, Cambodia. **A.** habitus; **B**. labrum; **C**. aedeagus and inner sac; **D**. female allotype from Phnom Kulen, Cambodia: labrum . Scale-lines: 1 mm and 0.5 mm.

Length: 7.5-8 mm (without labrum).

ETYMOLOGY: This new distinctive Ifasina species is so named in memory and celebration of the Khmer civilization and empire (IX-XV centuries), whose famous capital and jungle temple of Angkor, where the holotype specimen has been collected, stands as one of the great jewels of the human cultural heritage. Special thanks are to be expressed to the actual collectors of this new species. REMARKS: C. (I.) khmer n. sp. is obviously a close relative of C. (I.) viduata (FABRICIUS, 1801), and it could even be considered a subspecific form of it, if it were not for the remarkable stability shown by viduata over all its enormous geographical range. In particular, however, viduata has smaller, almost effaced elytral dots, it lacks any subhumeral dot, it has a smaller and narrower subapical spot, and moreover it was found to syntopically occur with khmer in one Cambodian locality at least (see above); other SE Asian Ifasina species, such as humillima (GESTRO, 1893), macilenta (SCHAUM, 1862), dilatotarsa (W. HORN, 1924), kaleea (BATES, 1866), decempunctata (DEJEAN, 1825) and modica (GESTRO, 1893) have a narrow and complete apical lunule (HORN, 1938); pronotalis (W. HORN, 1922) has much smaller elytral dots and a different, shagreened, pronotal sculpture; humerula (W. HORN, 1905) has a complete humeral lunule; the viridilabris-group species [namely viridilabris (CHAUDOIR, 1852), somnuki NAVIAUX, 1991, and fallaciosa (W. HORN, 1897)] have a roundish, instead of comma-shaped, subapical spot, as also have spinolae (GESTRO, 1889) and subtilesignata (MANDL, 1970), which, in addition, have a differently coloured, much reddish pronotum; paucipilina (ACCIAVATTI & PEARSON, 1989) and paeninsularis NAVIAUX, 1891, have a testaceous/pale labrum. The most similarly looking species, as far as the general shape and the elytral markings are concerned, is balabacensis NAVIAUX & SAWADA, 1996, described from Balabac I. in the Philippines, which, however, lacks any middle band (NAVIAUX & SAWADA, 1996).

### 34. Cylindera (Ifasina) spinolae (GESTRO, 1889)

THAILAND, Loei: Na Haeo (bio station), 5-12.V.01, secondary forest, Constant & Grootaert, 1 & (FCC); Na Haeo (bio station), 5-12.V.01, Malaise trap, P. Grootaert, 1 & (RBINS); Na Haeo, Chang Tok Waterfalls, 10.V.01, Constant & Grootaert, 1 & (RBINS); Na Haeo Khring Tok, 19.V.03, 23041, P. Grootaert, 1 & (RBINS).

A common species, widely distributed from eastern Nepal and north-eastern India eastward to Vietnam (WIESNER, 1992; SAWADA & WIESNER, 1999). The mascu-

line singular emendation (spinolai) by FLEUTIAUX (1902), considered to be justified by ACCIAVATTI & PEARSON (1989), would appear to be untenable according the the Zoological Code (ICZN, 1999).

35. *Cylindera (Ifasina) juergenwiesneri* NAVIAUX, 1991 THAILAND, Loei: Na Haeo, river before village, 8.V.01, Constant & Grootaert, 3 ♂ 3 ♀♀ (RBINS), 3 ♂ 2 ♀♀ (FCC); Dan Sai, Bantun, 11.V.01, Constant & Grootaert, 1 ♂ 1 ♀ (RBINS).

Apparently a Thai endemic (NAVIAUX, 1991; NAVIAUX & PINRATANA, 2004), this small species is clearly a close relative of *C. (I.) discreta* (SCHAUM, 1863). Past records of the latter species from Cambodia (HORN, 1913; WIESNER, 1992) may well refer, in reality, to *juergenwiesneri* (Table I).

36. *Cylindera (Eugrapha) minuta* (Olivier, 1790)
THAILAND, Loei: Na Haeo FIRS, 16.V.03, station 23032,
P. Grootaert, 3 ♂♂ 2 ♀♀ (RBINS), 1 ♂ 1 ♀ (FCC).

CAMBODIA, Siem Reap: Tonle Sap Lake, Prek Toal, 27.V.03, light trap, J. Constant, K. Smets & P. Grootaert, 1 \( \text{(RBINS)}. \)

This common widespread species, known to range from India into Southeast Asia and Indonesia (ACCIAVATTI & PEARSON, 1989; WIESNER, 1992), had not yet been formally recorded from Cambodia.

37. *Myriochila (Myriochila) sinica* (Fleutiaux, 1889) CAMBODIA, Siem Reap: Phnom Kulen, 24-25.V.03, day catch, J. Constant & K. Smets, 1 ♀ (RBINS); 8 km N of Sre Noi (road to Anlong Vaeng), 29.V.03, light trap, J. Constant & K. Smets,

1 ♀ (RBINS). Angkor, Preah-Kahn, Temple, 31.V.03, light trap, J. Constant & K. Smets, 3♀♀ (RBINS), 1♀ (FCC);

A Southeast Asian species, known to occur in muddy areas from Myanmar to Vietnam and southern China (NAVIAUX & PINRATANA, 2004), but puzzlingly (perhaps erroneously) indicated from Java too (WIESNER, 1992). It was firstly formally recorded from Cambodia by SAWADA & WIESNER (1999).

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#### References

ACCIAVATTI, R.E. & PEARSON, D.L., 1989. The tiger beetle genus *Cicindela* (Coleoptera, Insecta) from the Indian subcontinent. *Annals of Carnegie Museum*, 58: 77-353; Pittsburgh, Pennsylvania, USA.

CASSOLA, F., 1991. Studi sui Cicindelidi. LXIII. I Cicindelidae (Coleoptera) dell'Isola di Sulawesi, Indonesia. *Annali del Museo Civico di Storia Naturale "G. Doria"*, 88: 481-664; Genova, Italy.

CASSOLA, F. & PEARSON, D.L., 2000. Global patterns of tiger beetle species richness (Coleoptera: Cicindelidae): their use in conservation planning. *Biological Conservation*, 95: 197-208; Barking, UK.

FLEUTIAUX, E., 1902. Contributions à la faune Indo-chinoise (Indochine française). 18<sup>e</sup> Mémoire. Deuxième addition aux Cicindelidae et Elateridae. *Annales de la Société entomologique de France*, 71: 569-580; Paris, France.

HORN, W., 1913. Matériaux pour servir à l'étude de la faune entomologique de l'Indo-Chine. Cicindelinae. *Annales de la Société entomologique de Belgique*, 57: 362-366; Brussels, Belgium.

HORN, W., 1914. Matériaux pour servir à l'étude de la faune entomologique de l'Indo-Chine. Cicindelinae Nº II. *Annales de la Société entomologique de Belgique*, 58: 137-140; Brussels, Belgium.

HORN, W., 1938. 2000 Zeichnungen von Cicindelinae. *Entomologische Beihefte aus Berlin-Dahlem*, 5: 1-71, pls.1-90; Berlin, Germany.

ICZN (INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE), 1999. International Code of Zoological Nomenclature. Fourth Edition, pp. XXIX-306; Padova, Italy.

NAVIAUX, R., 1984. Coleoptera, Cicindelidae. Les Cicindèles de Sri Lanka. Revue scientifique du Bourbonnais, 57-80.

NAVIAUX, R., 1989. Sur deux nouveaux *Prothyma* (Hope) du nord de la Thaïlande (Coleoptera, Cicindelidae). *Revue française d'Entomologie (N.S.)*, 11: 1-3; Paris, France.

NAVIAUX, R., 1991a. Les Cicindèles de la Thaïlande, étude faunistique (Coleoptera Cicindelidae). *Bulletin mensuel de la Société linnéenne de Lyon*, 60: 209-288; Lyon, France.

NAVIAUX, R., 1991b. Nouvelles espèces du genre *Neocollyris* Horn (Col. Cicindelidae). *Bulletin de la Société entomologique de France*, 96: 275-282; Paris, France.

NAVIAUX, R., 1995. Les *Collyris* (Coleoptera Cicindelidae). Revision des genres et description de nouveaux taxons. *Société linnéenne de Lyon*, 1-332; Lyon, France.

NAVIAUX, R., 1996a. Diagnoses de cinq espèces du genre *Collyris* (s.l.) (Col. Cicindelidae). *Bulletin de la Société ento-mologique de France*, 101: 230; Paris, France.

NAVIAUX, R., 1996b. Trois nouvelles espèces du genre *Naviauxella* Cassola (Coleoptera, Cicindelidae). *Revue scientifique du Bourbonnais*, 65-70.

NAVIAUX, R., 2002. Les Tricondylina (Coleoptera, Cicindelidae). Révision des genres *Tricondyla* Latreille et *Derocrania* 

Chaudoir et descriptions de nouveaux taxons. Mémoires de la SEF, 5: 1-106; Paris, France.

NAVIAUX, R., 2004. Les *Collyris* (Coleoptera Cicindelidae). Complément à la «Révision du genre Collyris (sensu lato)» et description de nouveaux taxons. *Bulletin mensuel de la Société linnéenne de Lyon*, 73 : 55-142; Lyon, France.

NAVIAUX, R. & PINRATANA, B.A., 2004. The tiger beetles of Thailand (Coleoptera, Cicindelidae). Brothers of St. Gabriel in Thailand, Sunprinting, 1-177; Bangkok, Thailand.

NAVIAUX, R. & SAWADA, H., 1996. *Cylindera (Ifasina) balabacensis*, nouvelle espèce des Philippines (Coleoptera, Cicindelidae). *Revue scientifique du Bourbonnais*, 65-70.

PEARSON, D.L. & CASSOLA, F., 1992. World-Wide Species Richness Patterns of Tiger Beetles (Coleoptera: Cicindelidae): Indicator Taxon for Biodiversity and Conservation Studies. *Conservation Biology*, 6, 3: 376-391; Barking, UK.

PROBST, J. & WIESNER, J., 1994. Über Sandlaufkäfer der Gattung *Therates* aus Thailand (Coleoptera: Cicindelidae). *Entomologische Zeitschrift mit Insektenbörse*, 104: 92-102; Bonn, Germany.

RIVALIER, E., 1950. Démembrement du genre Cicindela Linné (Travail préliminaire limité à la faune paléarctique). Revue française d'Entomologie, 17: 217-244; Paris, France.

RIVALIER, E., 1953. Note sur une sous-espèce méconnue de *Lophyridia angulata* F. *Revue française d'Entomologie*, 20: 81-84; Paris, France.

RIVALIER, E., 1961. Démembrement du genre *Cicindela* L. (suite). IV. Faune indomalaise. *Revue française d'Entomologie*, 28 : 121-149; Paris, France.

RIVALIER, E., 1964. Le genre *Prothyma* Hope. Révision et description de quatre espèces nouvelles. *Revue française d'Entomologie*, 31: 127-164; Paris, France.

SAWADA, H. & WIESNER, J., 1999. Beitrag zur Kenntnis der Cicindelidae von Laos (Coleoptera). *Entomologische Zeitschrift mit Insektenbörse*, 109: 27-43; Bonn, Germany.

SAWADA, H. & WIESNER, J., 2002. Further new records of tiger beetles collected in Laos (Coleoptera: Cicindelidae). *Entomological Review of Japan*, 57: 65-99; Tokyo, Japan.

SCHMIDT-GOEBEL, H.M., 1846. Faunula Coleopterorum Birmaniae. I. Coleoptera. I. Cicindelae. Pp.1-17.

WIESNER, J., 1988. Die Gattung *Therates* Latr. und ihre Arten. *Mitteilungen der Münchner Entomologischen Gesellschaft*, 78: 5-107; Münich, Germany.

WIESNER, J., 1992. Verzeichnis der Sandlaufkäfer der Welt. Checklist of the Tiger Beetles of the World. Verlag Erna Bauer, 364 pp; Keltern-Weiler, Germany.

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